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CLAIMS

[Claim(s)]

[Claim 1]A reel device which has two or more rotation reels in the rear-face side of the front panel in which a reel display window was formed is arranged, In a game machine constituted so that two or more patterns drawn on each rotation reel of this reel device might be in sight through a reel display window of the front panel, A game machine, wherein a display device which displays information relevant to a game content through a reel display window with a pattern of each rotation reel of a reel device is arranged between a reel display window of the above-mentioned front panel, and a reel device.

[Claim 2]While a front door which has the front panel in which a reel display window was formed is attached to a case so that opening and closing are possible, In this case, a reel device which has two or more rotation reels in the rear-face side of the front panel of a front door is arranged, In a game machine constituted so that two or more patterns drawn on each rotation reel of this reel device might be in sight through a reel display window of the front panel, A game machine, wherein a display device which displays information relevant to a game content through a reel display window with a pattern of each rotation reel of a reel device is arranged between a reel display window of the above-mentioned front panel, and a reel device and this display device is attached to an attaching part of a reel device.

[Claim 3]The game machine according to claim 1 or 2 which forms a linear light-emitting part in a panel with the above-mentioned transparent display device.

[Claim 4]A game machine of any one description of the Claims 1-3 currently formed in the shape of [to which the above-mentioned display device was along a peripheral face of a rotation reel] a curving surface.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]Especially this invention relates to that where two or more patterns drawn on the rotation reel are in sight through the reel display window of the front panel about game machines, such as a slot machine.

[0002]

[Description of the Prior Art]While the front door which generally has the front panel in which the reel display window was formed, in a slot machine is attached to the case so that opening and closing are possible, The reel device which has three rotation reels in the rear-face side of the front panel of the front door in this case is arranged, and three patterns drawn on each rotation reel of this reel device are in sight through the reel display window of the front panel, respectively. And a total of five winning lines of three width and two slant are printed by the reel display window of the front panel, When the pattern of each rotation reel of a reel device becomes a predetermined combination and it stops along the line validated among these five winning lines according to the number of injections of a medal, etc., the medal of a specified number pays out.

[0003]Also in a pachinko machine, there are some which used the reel device for the variable display device. This reel device is smaller than the thing for slot machines, and is attached to the rear-face side of the game board as the front panel.

Two or more patterns drawn on each rotation reel of a reel device are in sight through the reel display window formed in the game board.

[0004]

[Problem to be solved by the invention]However, since a certain amount of distance is between the peripheral face of the rotation reel of a reel device, and the reel display window of the front panel in the above-mentioned conventional game machine, In particular among winning lines, with a slanting line, the gap with the position stood in a line and stopped and a line position became large at both ends, and it did not go out [the pattern of each rotation reel of a reel device wiped and] giving a game person an unnatural and imperfect image.

[0005]Since it is a place in which the reel display window of the front panel of a front door brings a game person's look together most in the case of a slot machine, the production function of a game is given to the winning line established in this reel display window, or the display window itself, and the thing it was made to make it contribute to the diversity of a game is proposed variously. For example, JP,H4-109977,A has disclosed carry out the light-emitting display of the winning line which provided the optical fiber which constitutes a winning line in the reel display window of the front panel, and was validated according to the number of injections of a medal, etc. The patent No. 2668067 gazette has disclosed attach to the front panel the liquid crystal shutter which constitutes a reel display window, and at the time of a game start, make a liquid crystal shutter transparent, and

every rotation reel three patterns of every of a reel device are in sight through a liquid crystal shutter altogether, and make opaque the portion of the display window corresponding to a pattern unrelated to the combination of winning a prize at the time of a game end.

[0006]However, although each thing of such a proposal supposes that parts, such as an optical fiber and a liquid crystal shutter, will be attached to a rear face of the front panel of a front door, Parts, such as various displays for indication, are already attached to a rear face of this front panel, and there is a problem of structure being complicated by addition of fittings. Since the front panel of a front door tends to be influenced by external force, it also has a problem that fear of breakage of parts attached to a rear face of this front panel becomes large.

[0007]This invention is made in view of these many points, and is a thing.

The purpose SUBJECT by bringing a display device which displays a winning line etc. close to rotation reel slippage of a reel device rather than a front panel side, It is providing a game machine which a display by the display device is kept from giving a game person an unnatural and imperfect image, has it in him, and can heighten a display effect.

[0008]Enforcement-izing is made easy to attain, without the 2nd SUBJECT of this invention setting up an attachment part of a display device suitably, and causing complication of structure in addition to the 1st SUBJECT mentioned above, especially in a slot machine.

[0009]

[Means for solving problem]In order to solve the 1st SUBJECT of the above, invention concerning Claim 1, A reel device which has two or more rotation reels in the rear-face side of the front panel in which a reel display window was formed is arranged, In a game machine constituted so that two or more patterns drawn on each rotation reel of this reel device might be in sight through a reel display window of the front panel, It has composition which arranges a display device which displays information relevant to a game content through a reel display window between a reel display window of the above-mentioned front panel, and a reel device with a pattern of each rotation reel of a reel device.

[0010]In this composition, the display device which displays the information relevant to a game content through a reel display window with the pattern of each rotation reel of a reel device Between the reel display window of the front panel, and reel devices, That is, since rotation reel slippage of a reel device is approached and it is arranged rather than the front panel side, the distance between the display surface of this display device and the pattern of a rotation reel peripheral face becomes short, and a gap of mutual physical relationship is lost.

[0011]Invention which relates to Claim 2 in order to solve the 2nd SUBJECT of the above While the front door which has the front panel in which the reel display window was formed is attached to the case so that opening and closing are possible, The reel device which has two or more rotation reels in the rear-face side of the front panel of the front door in this case is arranged, In the game machine, i.e., the slot machine, which were constituted so that two or more patterns drawn on each rotation reel of this reel device might be in sight through the reel display window of the front panel, It has composition which arranges the display device which displays the information relevant to a game content through a reel display window between the reel display window of the above-mentioned front panel, and a reel device with the pattern of each rotation reel of a reel device, and attaches this display device to the attaching part of a reel device.

[0012]In this composition, since a display device approaches rotation reel slippage of a reel device and is arranged rather than the front panel side like the case of invention concerning Claim 1, the distance between the display surface of this display device and the pattern of a rotation reel peripheral face becomes short, and a gap of mutual physical relationship is lost. And since the display device is attached to the attaching part of the reel device which is a case side, the number of the parts attached to the rear face of the front panel with this display device does not increase, and it does not cause complication of structure. The front panel of a front door will achieve the duty

which protects a display device, and the influence by external force is avoided.

[0013]Invention concerning Claim 3 provides the desirable form of the above-mentioned display device in the game machine according to claim 1 or 2. That is, linear light-emitting parts (for example, an EL element, LED, or an optical fiber etc.) are formed in a transparent panel, and the above-mentioned display device is constituted on it. By carrying out the light-emitting display of the information relevant to a game content with the linear light-emitting part of a display device, making the pattern of each rotation reel of a reel device penetrate by the transparent panel of a display device in this composition, After the information relevant to the pattern and game content of each rotation reel has been put together, it will be visible through the reel display window of the front panel. Compared with the case where a display device is moreover constituted using a liquid crystal shutter, easily, control etc. will be inexpensive also in cost and will end.

[0014]Invention concerning Claim 4 has composition which forms the above-mentioned display device in the shape of [along the peripheral face of the rotation reel] a curving surface in the game machine of any one description of the Claims 1-3. In this composition, distance between that peripheral face and display surface of a display device can be made regularly along the peripheral face of a rotation reel, and a gap of mutual physical relationship is lost more certainly.

[0015]

[Mode for carrying out the invention]Hereafter, an embodiment of the invention is described based on Drawings. Drawing 1 and drawing 2 show the slot machine A as a game machine concerning a 1st embodiment of this invention, and the front door 2 makes that left-hand side the front opening of the case 1 the hinge side, and it comes to attach this slot machine A so that opening and closing are possible.

[0016]The above-mentioned front door 2 casts or carries out the resin mold of the metal, such as aluminum, constitutes the frame body 5, and attaches the upper panel 6, the control house panel 7, and the lower panel 8 to this frame body 5 as the front panel, respectively. It hits the upper panel 6 and a pattern etc. are printed. While the reel display window 10 is formed in that center section, the credit number-of-sheets display for indication 11, the expenditure number-of-sheets display for indication 12, and number-of-times display-for-indication of accessory success in an election 13 grade which become the circumference of this reel display window 10 from a digital display machine respectively are provided in the control house panel 7. Between this control house panel 7 and the lower panel 8 which gives a vignette, the medal slot 16, the stop buttons 18, 18, and 18 of 17 or 3 start levers, 1 bed button 19, 2 bed button 20, and 3 bed button 21 are formed as a game operation implement. Under the lower panel 8, the medal expenditure mouth 26, the medal saucer 27, and loudspeaker 28 grade are provided.

[0017]Although not illustrated in the rear-face side of the above-mentioned front door 2, while an electrical-parts box which stores an electrical part of the various digital display machines 11 - 13 grades, a lead of a game operation implement, etc. around the reel display window 10 of the control house panel 7 is attached, A lighting box which stores the lighting corresponding to the lower panel 8 is attached. A medal passage for performing expenditure of a medal, etc. from a speaker box which stores the loudspeaker 28, and the medal expenditure mouth 26, etc. are attached.

[0018]On the other hand, in the above-mentioned case 1, the above-mentioned reel display window 10 is countered, and the reel device 30 is arranged. As this reel device 30 is shown also in drawing 3, the three rotation reels 32, 32, and 32 are arranged in on a horizontal axis line in the maintenance box 31 which carries out an opening ahead, and it supports independently, enabling free rotation, and two or more patterns (not shown) are given to a peripheral face of each rotation reel 32, respectively. Inside each rotation reel 32, the step motor 33 made to rotate it uniquely is arranged. And where the front door 2 is closed, while every three rotation reel 32 a total of nine patterns of every are in sight through the reel display window 10 of the front door 2, respectively. The three rotation reels 32, 32, and 32 rotate all at once by operation of the start lever 17 after a medal injection, and the rotation reel 32 corresponding by pushing operation of each stop button 18 stops

individually.

[0019]The maintenance box 31 of the above-mentioned reel device 30 is being fixed on the reel mounting shelf 35 formed in the case 1. While main control base sheet 36 grade is arranged above [other than the reel device 30] the reel mounting shelf 35 in the case 1, the hopper drive 37 and switchboard 38 grade are arranged below the reel mounting shelf 35.

[0020]And as the focus of this invention between the reel display window 10 of the above-mentioned front door 2, and the reel device 30, The display device 40 which displays 9 block frames as information relevant to a game content through the reel display window 10 with every three rotation reel 32 a total of nine patterns of every of the reel device 30 is arranged. This display device 40 is provided with the following.

EL element panel 41.

Before and after holding on both sides of [from a side front and the back side] this EL element panel 41, they are the two panel frames 42 and 43.

[0021]The above-mentioned EL element panel 41 arranges the nine block frames a1 respectively corresponding to every three rotation reel 32 a total of nine patterns of every of the reel device 30, a2, a3, b1, b2, b3, c1, c2, and c3 on the film 45 with transparent rectangular shape so that it may show in detail to drawing 4 and drawing 5. Each block frames a1-a3, b1-b3, c1 - c3 form the EL element as a linear light-emitting part in a rectangular frame. If this EL element laminates the rear electrode 51, the insulating layer 52, the luminous layer 53, and the surface electrode 54 one by one and impresses predetermined voltage between the rear electrode 51 and the surface electrode 54 on the film 45, the luminous layer 53 will emit light and the luminescent color will change with change of impressed electromotive force to red and a green two color at least. Each lead connected to the above-mentioned rear electrode 51, the surface electrode 54, and these is transparent. The lead connected to the electrodes 51 and 54 of each block frames a1-a3, b1-b3, c1 - c3 is connected to the one band-like cable 56 at the left end of the EL element panel 41. The connector 57 for connecting with the panel control board 44 (refer to drawing 6) of the display device 40 is formed at the tip of this cable 56.

[0022]Both the two panel frames 42 and 43 consist of synthetic resins, such as transparent ABS, before and after the above. The upper part and the lower part are attached to it by screw 58 stop in contact with a front tip part of the maintenance box 31, respectively while the panel frame 42 by the side of front is formed in the shape of a curving surface along the peripheral face so that the rotation reel 32 may be covered by a front side of the maintenance box 31 of the reel device 30. The panel frame 43 on the backside intervenes, inserts the EL element panel 41 into the panel frame 42 by the side of front, and is being fixed while being formed in the shape of a curving surface along a peripheral face of the rotation reel 32 of the reel device 30. Therefore, the EL element panel 41 curves along a peripheral face of the rotation reel 32 of the reel device 30 in the state where it was inserted and held with the two panel frames 42 and 43 approximately [this]. Each block frames a1-a3 of this EL element panel 41, b1-b3, c1 - c3 surround a pattern of the rotation reel 32 corresponding, respectively.

[0023]Drawing 6 shows composition of a control system of the above-mentioned slot machine A. In this figure, the main control base sheet 36 has CPU, ROM, RAM, etc., While controlling the reel device 30, the reel lighting system 61, and the various digital display machines 11-13, receiving a signal from a game operation implement of start lever 17 grade, the loudspeaker 28 is controlled via the loudspeaker drive circuit 62. Although the reel lighting system 61 is not shown in detail by a diagram, it begins to illuminate a pattern of rotation reel 32 peripheral face of the reel device 30 from an inside of the rotation reel 32, or is beginning to illuminate it from the outside (for example, the rear-face side of the front door 2).

[0024]The above-mentioned main control base sheet 36 controls the EL element panel 41 via the panel control board 44 while controlling the hopper drive 37 via the hopper control board 63 further.

The hopper control board 63 has sub CPU, ROM, RAM, etc., and controls the hopper drive 37 based on the command signal from the main control base sheet 36, and the detecting signal from the hopper expenditure sensor 64. Similarly the panel control board 44 has sub CPU, ROM, RAM, etc., and controls the EL element panel 41 based on the command signal from the main control base sheet 36. Lighting processing control of this EL element panel 41 is performed according to the flow chart shown in drawing 7. Hereafter, this flow chart is explained.

[0025]That is, in drawing 7, after waiting to throw the medal of the first sheet into the medal slot 16 at Step S1 first, the block frame a2 of the middle of the EL element panel 41, b2, and c2 are turned on in red by Step S2. Then, if it judges whether the start lever 17 was operated and is not operated at Step S3, it is judged whether the handsome medal was further thrown in by step S4. When a handsome medal is thrown in without operating the start lever 17, at Step S5, it is green and the block frame a1 of the upper row of the EL element panel 41, b1, c1 and the block frame a3 of the lower berth, b3, and c3 are turned on.

[0026]Next, if it judges whether the start lever 17 was operated again and is not operated at Step S6, it is judged whether the medal of the actor playing a comic role was further thrown in at Step S7. When the medal of an actor playing a comic role is thrown in without operating the start lever 17, the block frame a1 of the upper row of the EL element panel 41, b1, c1 and the block frame a3 of the lower berth, b3, and c3 are switched to a red light from green at Step S8. It waits to operate the start lever 17 by step S9 after an appropriate time.

[0027]When the judgment of either the above-mentioned step S3, S6 and S9 is YES (i.e., when the start lever 17 is operated after an injection of a medal), Lots are cast at Step S10, and after rotating the rotation reel 32 of the reel device 30 at Step S11, based on the above-mentioned lottery result, game processing is performed at Step S12. In this game processing, the rotation reel 32 to which the reel device 30 is equivalent by the pushing operation of the stop button 18 is stopped. Then, all the block frames a1-a3 of the EL element panel 41, b1-b3, c1 - c3 are switched off at Step S13, and 1 time of a game is ended.

[0028]Although the flow chart of drawing 7 shows the case where throw a medal into the medal slot 16 and a game is performed, when operation of the credit buttons 19-21 performs a game instead of a medal injection, lighting processing of the EL element panel 41 is performed similarly. Namely, when the block frame a2 of the middle of the EL element panel 41, b2, and c2 will light up in red if 1 bed button 19 is pushed, and 2 bed button 20 is pushed, the block frame a2 of the middle of the EL element panel 41, b2, and c2 in red. If the block frame a1 of the upper row and the lower berth, a3, b1, b3, c1, and c3 are green, they light up, respectively and push 3 bed button 21, all the block frames a1-a3 of the EL element panel 41, b1-b3, c1 - c3 will light up in red.

[0029]Therefore, in the slot machine A of a 1st embodiment of the above, When operating the start lever 17 and performing a game after throwing the medal of one sheet into the medal slot 16 or pushing 1 bed button 19, Only the three block frames a2 of the middle, b2, and c2 light up in red among the nine block frames a1-a3 of the EL element panel 41 of the display device 40 arranged to the reel display window 10 rear-face side of the front door 2, b1-b3, c1 - c3. When operating the start lever 17 and performing a game after throwing the medal of two sheets into the medal slot 16 or pushing 2 bed button 20, While the three block frames a2 of the middle, b2, and c2 light up in red, the six block frames a1 of the upper row and the lower berth, a3, b1, b3, c1, and c3 are green, and they light up. When operating the start lever 17 and performing a game after throwing the medal of three sheets into the medal slot 16 or pushing 3 bed button 21, all of the nine block frames a1-a3, b1-b3, c1 - c3 light up in red.

[0030]and the EL element panel 41 and the panel frames 42 and 43 of the above-mentioned display device 40 are all transparent, since it is, These will be penetrated and the three rotation reels 32 of the reel device 30 will appear from the reel display window 10 with the block frames a1-a3 which it was [being red or] green and were turned on, b1-b3, c1 - c3. When the rotation reel 32 stops especially, every three patterns of each rotation reel 32 are in sight in the state where it was

surrounded by the block frames a1-a3, b1-b3, c1 - c3, respectively. For this reason, even when the winning line is not printed by the reel display window 10 of the control house panel 7 like the former, the game person can distinguish easily the mutual difference during the time of an one-sheet injection of a medal, a two-sheet injection, and a three-sheet injection. In addition to a 9-block frame display, of course, a winning line may be printed as usual to the reel display window 10 of the control house panel 7.

[0031] Since the above-mentioned display device 40 approaches rotation reel 32 slippage of the reel device 30 in the case 1 and is moreover arranged from the 7th page of the control house panel of the front door 2, Distance between the EL element panel 41 of this display device 40 and the peripheral face of the rotation reel 32 can be shortened, and the gap of physical relationship with each block frames a1-a3 of the EL element panel 41, b1-b3, c1 - c3, and the pattern of rotation reel 32 peripheral face corresponding to it can be lost as much as possible. A clear display can be performed. Since it is formed in the shape of [to which the EL element panel 41 was along the peripheral face of the rotation reel 32 in the state where it was inserted between the panel frames 42 and 43, especially at this embodiment] a curving surface, Distance between the peripheral face and EL element panel 41 can be made regularly along the peripheral face of the rotation reel 32, and clear-ization of a display can be attained further.

[0032] Since the above-mentioned display device 40 is attached to the maintenance box 31 of the reel device 30 which is the case 1 side, the number of the parts attached to the rear-face side of the front door 2 with this display device 40 does not increase, and it does not cause complication of structure. Since the control house panel 7 of the front door 2 achieves the duty which protects this ahead [of the display device 40], the influence by external force when a game person etc. hit the control house panel 7 can be avoided, and breakage prevention of the display device 40 can be planned.

[0033] Drawing 8 shows the slot machine B concerning a 2nd embodiment of this invention. Although this slot machine B only differs in the EL element panel 71 of the display device 40 arranged between the slot machine A and front door concerning a 1st embodiment, and the reel device 30 in the case 1 and is explained below about that composition, Since other composition is completely the same, identical codes are given to the same component and the explanation is omitted. In the following explanation, the mark given to it with reference to drawing 1 is quoted about the component and parts by the side of a front door.

[0034] Namely, the above-mentioned EL element panel 71 so that it may show in detail to drawing 9 and drawing 10. A total of five winning lines L1 of three width and two slant, L2, L3, L4, and L5 are arranged on the film 72 with transparent rectangular shape, and each of these winning lines L1-L5 form the EL element as a linear light-emitting part in linear shape. This EL element on the film 72 as well as it of the slot machine A which shows drawing 5. A rear electrode (equivalent to 51 in drawing 5), an insulating layer (said — 52), a luminous layer (said — 53), and a surface electrode (said — 54) are laminated one by one and predetermined voltage is impressed between a rear electrode and a surface electrode, a luminous layer will emit light in red (or green). Each lead connected to the above-mentioned rear electrode, a surface electrode, and these is transparent, The lead connected to the electrode of each winning lines L1-L5 is connected to the one band-like cable 73 at the left end of the EL element panel 71, and the connector 74 is formed at the tip of this cable 73.

[0035] And it is arranged in the state where it curved along the peripheral face of the rotation reel 32 of the reel device 30 by pinching the EL element panel 71 with the two panel frames 42 and 43 approximately, and attaching to the front side of the maintenance box 31 of the reel device 30 via these. The winning lines L1-L5 of this EL element panel 41 are visible through the reel display window 10 of the front door 2 with every three patterns of each rotation reel 32 of the reel device 30. When the medal of one sheet is thrown into the medal slot 16 or 1 bed button 19 is pushed, When only the central winning line L1 lights up in red, and the medal of two sheets is thrown into the medal slot 16 or 2 bed button 20 is pushed, When the winning lines L1-L3 of three width light up in

red, and the medal of three sheets is further thrown into the medal slot 16 or 3 bed button 21 is pushed, the five winning lines L1-L5 light up in red altogether.

[0036]Also in such a slot machine B, like the case of the slot machine A concerning a 1st embodiment, While being able to eliminate the gap of physical relationship with the winning lines L1-L5 of the EL element panel 71, and the pattern of rotation reel 32 peripheral face corresponding to it as much as possible and being able to attain clear-ization of a display, Of course, the effect of being able to plan breakage prevention of the display device 40 under the influence of external force is done so.

[0037]In 1st and 2nd embodiments of the above, as display information by the display device 40 arranged between the reel display window 10 of the front door 2, and the reel device 30 by the side of the case 1, Although the lighted indication of the block frames a1-a3, b1-b3, c1 - c3 was carried out or the lighted indication of the winning lines L1-L5 was carried out instead of the winning line which carried out the printing display also of any to the conventional **** reel display window 10, It may be made for this invention to display the information relevant to game contents other than this winning line display. For example, it is made to make the reliability identify at the same time it notifies of flag formation by combining the lighting number of the block frames a1-a3, b1-b3, c1 - c3, and the difference in a color, or changing the luminescent color of the winning lines L1-L5, or performing a blink shift so that it may run a line top. Multicolor blink etc. are performed at the time of great success, and a winning-a-prize pattern is emphasized, or all of the block frames a1-a3, b1-b3, c1 - c3 are blinked, and it appeals.

[0038]In each above-mentioned embodiment, although each used the EL element panels 41 and 71 as a linear light-emitting part of the display device 40, the panel which arranges linear LED or an optical fiber etc. may be used for a transparent panel instead of being these EL element panels 41 and 71. A liquid crystal shutter may be used as the display device 40.

[0039]This invention is applicable not only to a slot machine but the thing which used the reel device for the variable display device in the pachinko machine like each above-mentioned embodiment. In this case, what is necessary is just to also attach to a game board the display device arranged between a reel device and the reel display window of a game board, since a reel device is attached to the rear-face side of the game board as the front panel.

[0040]

[Effect of the Invention]As mentioned above, according to the game machine of this invention, between the reel display window of the front panel, and a reel device, By arranging the display device which displays the information relevant to a game content through a reel display window with the pattern of each rotation reel of a reel device, Since distance between the display surface of a display device and the pattern of a rotation reel peripheral face can be shortened and a gap of mutual physical relationship can be lost as much as possible, a clear indication which does not give a game person sense of incongruity can be given, and improvement in visibility can be aimed at.

[0041]By attaching a display device to the attaching part of the reel device which is a case side of a slot machine especially in invention concerning Claim 2, Enforcement-ization can be attained easily, without causing **** of the number of fittings on the rear face of the front panel of a front door, and by extension, complication of structure, and it has simultaneously the effect that the influence by external force is avoidable etc.

[0042]Since the information relevant to a game content can be certainly displayed with the pattern of each rotation reel of a reel device, and also control of a display, etc. are inexpensive also easily in cost and can be managed with invention concerning Claim 3, it is very advantageous when attaining enforcement-ization.

[0043]In invention concerning Claim 4, since distance between the peripheral face and display surface of a display device can be made regularly along the peripheral face of a rotation reel, clear-ization of a display can be attained further.

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TECHNICAL FIELD

[Field of the Invention]Especially this invention relates to that where two or more patterns drawn on the rotation reel are in sight through the reel display window of the front panel about game machines, such as a slot machine.

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PRIOR ART

[Description of the Prior Art]While the front door which generally has the front panel in which the reel display window was formed, in a slot machine is attached to the case so that opening and closing are possible, The reel device which has three rotation reels in the rear-face side of the front panel of the front door in this case is arranged, and three patterns drawn on each rotation reel of this reel device are in sight through the reel display window of the front panel, respectively. And a total of five winning lines of three width and two slant are printed by the reel display window of the front panel, When the pattern of each rotation reel of a reel device becomes a predetermined combination and it stops along the line validated among these five winning lines according to the number of injections of a medal, etc., the medal of a specified number pays out.

[0003]Also in a pachinko machine, there are some which used the reel device for the variable display device. This reel device is smaller than the thing for slot machines, and is attached to the rear-face side of the game board as the front panel.

Two or more patterns drawn on each rotation reel of a reel device are in sight through the reel display window formed in the game board.

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EFFECT OF THE INVENTION

[Effect of the Invention]As mentioned above, according to the game machine of this invention, between the reel display window of the front panel, and a reel device, By arranging the display device which displays the information relevant to a game content through a reel display window with the pattern of each rotation reel of a reel device, Since distance between the display surface of a display device and the pattern of a rotation reel peripheral face can be shortened and a gap of mutual physical relationship can be lost as much as possible, a clear indication which does not give a game person sense of incongruity can be given, and improvement in visibility can be aimed at.

[0041]By attaching a display device to the attaching part of the reel device which is a case side of a slot machine especially in invention concerning Claim 2, Enforcement-ization can be attained easily, without causing *** of the number of fittings on the rear face of the front panel of a front door, and by extension, complication of structure, and it has simultaneously the effect that the influence by external force is avoidable etc.

[0042]Since the information relevant to a game content can be certainly displayed with the pattern of each rotation reel of a reel device, and also control of a display, etc. are inexpensive also easily in cost and can be managed with invention concerning Claim 3, it is very advantageous when attaining enforcement-ization.

[0043]In invention concerning Claim 4, since distance between the peripheral face and display surface of a display device can be made regularly along the peripheral face of a rotation reel, clear-ization of a display can be attained further.

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TECHNICAL PROBLEM

[Problem to be solved by the invention]However, since a certain amount of distance is between the peripheral face of the rotation reel of a reel device, and the reel display window of the front panel in the above-mentioned conventional game machine, In particular among winning lines, with a slanting line, the gap with the position stood in a line and stopped and a line position became large at both ends, and it did not go out [the pattern of each rotation reel of a reel device wiped and] giving a game person an unnatural and imperfect image.

[0005]Since it is a place in which the reel display window of the front panel of a front door brings a game person's look together most in the case of a slot machine, the production function of a game is given to the winning line established in this reel display window, or the display window itself, and the thing it was made to make it contribute to the diversity of a game is proposed variously. For example, JP,H4-109977,A has disclosed carry out the light-emitting display of the winning line which provided the optical fiber which constitutes a winning line in the reel display window of the front panel, and was validated according to the number of injections of a medal, etc. The patent No. 2668067 gazette has disclosed attach to the front panel the liquid crystal shutter which constitutes a reel display window, and at the time of a game start, make a liquid crystal shutter transparent, and every rotation reel three patterns of every of a reel device are in sight through a liquid crystal shutter altogether, and make opaque the portion of the display window corresponding to a pattern unrelated to the combination of winning a prize at the time of a game end.

[0006]However, although each thing of such a proposal supposes that parts, such as an optical fiber and a liquid crystal shutter, will be attached to the rear face of the front panel of a front door, Parts, such as various displays for indication, are already attached to the rear face of this front panel, and there is a problem of structure being complicated by addition of fittings. Since the front panel of a front door tends to be influenced by external force, it also has the problem that fear of breakage of the parts attached to the rear face of this front panel becomes large.

[0007]This invention is made in view of these many points, and is a thing.

The purpose SUBJECT by bringing the display device which displays a winning line etc. close to rotation reel slippage of a reel device rather than a front panel side, It is providing the game machine which the display by the display device is kept from giving a game person an unnatural and imperfect image, has it in him, and can heighten a display effect.

[0008]Enforcement-izing is made easy to attain, without the 2nd SUBJECT of this invention setting up the attachment part of a display device suitably, and causing complication of structure in addition to the 1st SUBJECT mentioned above, especially in a slot machine.

[Translation done.]

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MEANS

[Means for solving problem]In order to solve the 1st SUBJECT of the above, invention concerning Claim 1, The reel device which has two or more rotation reels in the rear-face side of the front panel in which the reel display window was formed is arranged, In the game machine constituted so that two or more patterns drawn on each rotation reel of this reel device might be in sight through the reel display window of the front panel, It has composition which arranges the display device which displays the information relevant to a game content through a reel display window between the reel display window of the above-mentioned front panel, and a reel device with the pattern of each rotation reel of a reel device.

[0010]In this composition, the display device which displays the information relevant to a game content through a reel display window with the pattern of each rotation reel of a reel device Between the reel display window of the front panel, and reel devices, That is, since rotation reel slippage of a reel device is approached and it is arranged rather than the front panel side, the distance between the display surface of this display device and the pattern of a rotation reel peripheral face becomes short, and a gap of mutual physical relationship is lost.

[0011]Invention which relates to Claim 2 in order to solve the 2nd SUBJECT of the above While the front door which has the front panel in which the reel display window was formed is attached to the case so that opening and closing are possible, The reel device which has two or more rotation reels in the rear-face side of the front panel of the front door in this case is arranged, In the game machine, i.e., the slot machine, which were constituted so that two or more patterns drawn on each rotation reel of this reel device might be in sight through the reel display window of the front panel, It has composition which arranges the display device which displays the information relevant to a game content through a reel display window between the reel display window of the above-mentioned front panel, and a reel device with the pattern of each rotation reel of a reel device, and attaches this display device to the attaching part of a reel device.

[0012]In this composition, since a display device approaches rotation reel slippage of a reel device and is arranged rather than the front panel side like the case of invention concerning Claim 1, the distance between the display surface of this display device and the pattern of a rotation reel peripheral face becomes short, and a gap of mutual physical relationship is lost. And since the display device is attached to the attaching part of the reel device which is a case side, the number of the parts attached to the rear face of the front panel with this display device does not increase, and it does not cause complication of structure. The front panel of a front door will achieve the duty which protects a display device, and the influence by external force is avoided.

[0013]Invention concerning Claim 3 provides the desirable form of the above-mentioned display device in the game machine according to claim 1 or 2. That is, linear light-emitting parts (for example, an EL element, LED, or an optical fiber etc.) are formed in a transparent panel, and the above-mentioned display device is constituted on it. By carrying out the light-emitting display of the information relevant to a game content with the linear light-emitting part of a display device, making

the pattern of each rotation reel of a reel device penetrate by the transparent panel of a display device in this composition, After the information relevant to the pattern and game content of each rotation reel has been put together, it will be visible through the reel display window of the front panel. Compared with the case where a display device is moreover constituted using a liquid crystal shutter, easily, control etc. will be inexpensive also in cost and will end.

[0014]Invention concerning Claim 4 has composition which forms the above-mentioned display device in the shape of [along a peripheral face of a rotation reel] a curving surface in a game machine of any one description of the Claims 1-3. In this composition, distance between that peripheral face and display surface of a display device can be made regularly along a peripheral face of a rotation reel, and a gap of mutual physical relationship is lost more certainly.

[0015]

[Mode for carrying out the invention]Hereafter, an embodiment of the invention is described based on Drawings. Drawing 1 and drawing 2 show the slot machine A as a game machine concerning a 1st embodiment of this invention, and the front door 2 makes that left-hand side a front opening of the case 1 the hinge side, and it comes to attach this slot machine A so that opening and closing are possible.

[0016]The above-mentioned front door 2 casts or carries out the resin mold of the metal, such as aluminum, constitutes the frame body 5, and attaches the upper panel 6, the control house panel 7, and the lower panel 8 to this frame body 5 as the front panel, respectively. It hits the upper panel 6 and a pattern etc. are printed. While the reel display window 10 is formed in that center section, the credit number-of-sheets display for indication 11, the expenditure number-of-sheets display for indication 12, and number-of-times display-for-indication of accessory success in an election 13 grade which become the circumference of this reel display window 10 from a digital display machine respectively are provided in the control house panel 7. Between this control house panel 7 and the lower panel 8 which gives a vignette, the medal slot 16, the stop buttons 18, 18, and 18 of 17 or 3 start levers, 1 bed button 19, 2 bed button 20, and 3 bed button 21 are formed as a game operation implement. Under the lower panel 8, the medal expenditure mouth 26, the medal saucer 27, and loudspeaker 28 grade are provided.

[0017]Although not illustrated in the rear-face side of the above-mentioned front door 2, while the electrical-parts box which stores the electrical part of the various digital display machines 11 - 13 grades, the lead of a game operation implement, etc. around the reel display window 10 of the control house panel 7 is attached, The lighting box which stores the lighting corresponding to the lower panel 8 is attached. The medal passage for performing expenditure of a medal, etc. from the speaker box which stores the loudspeaker 28, and the medal expenditure mouth 26, etc. are attached.

[0018]On the other hand, in the above-mentioned case 1, the above-mentioned reel display window 10 is countered, and the reel device 30 is arranged. As this reel device 30 is shown also in drawing 3, the three rotation reels 32, 32, and 32 are arranged in on a horizontal axis line in the maintenance box 31 which carries out an opening ahead, and it supports independently, enabling free rotation, and two or more patterns (not shown) are given to the peripheral face of each rotation reel 32, respectively. Inside each rotation reel 32, the step motor 33 made to rotate it uniquely is arranged. And where the front door 2 is closed, while every three rotation reel 32 a total of nine patterns of every are in sight through the reel display window 10 of the front door 2, respectively. The three rotation reels 32, 32, and 32 rotate all at once by operation of the start lever 17 after a medal injection, and the rotation reel 32 corresponding by the pushing operation of each stop button 18 stops individually.

[0019]The maintenance box 31 of the above-mentioned reel device 30 is being fixed on the reel mounting shelf 35 formed in the case 1. While the main control base sheet 36 grade is arranged above [other than the reel device 30] the reel mounting shelf 35 in the case 1, the hopper drive 37 and the switchboard 38 grade are arranged below the reel mounting shelf 35.

[0020] And as the focus of this invention between the reel display window 10 of the above-mentioned front door 2, and the reel device 30, The display device 40 which displays 9 block frames as information relevant to a game content through the reel display window 10 with every three rotation reel 32 a total of nine patterns of every of the reel device 30 is arranged. This display device 40 is provided with the following.

EL element panel 41.

Before and after holding on both sides of [from a side front and the back side] this EL element panel 41, they are the two panel frames 42 and 43.

[0021] The above-mentioned EL element panel 41 arranges the nine block frames a1 respectively corresponding to every three rotation reel 32 a total of nine patterns of every of the reel device 30, a2, a3, b1, b2, b3, c1, c2, and c3 on the film 45 with transparent rectangular shape so that it may show in detail to drawing 4 and drawing 5. Each block frames a1-a3, b1-b3, c1 - c3 form the EL element as a linear light-emitting part in a rectangular frame. If this EL element laminates the rear electrode 51, the insulating layer 52, the luminous layer 53, and the surface electrode 54 one by one and impresses predetermined voltage between the rear electrode 51 and the surface electrode 54 on the film 45, the luminous layer 53 will emit light and the luminescent color will change with change of impressed electromotive force to red and a green two color at least. Each lead connected to the above-mentioned rear electrode 51, the surface electrode 54, and these is transparent. The lead connected to the electrodes 51 and 54 of each block frames a1-a3, b1-b3, c1 - c3 is connected to the one band-like cable 56 at the left end of the EL element panel 41. The connector 57 for connecting with the panel control board 44 (refer to drawing 6) of the display device 40 is formed at the tip of this cable 56.

[0022] Both the two panel frames 42 and 43 consist of synthetic resins, such as transparent ABS, before and after the above. The upper part and the lower part are attached to it by the screw 58 stop in contact with the front tip part of the maintenance box 31, respectively while the panel frame 42 by the side of front is formed in the shape of a curving surface along the peripheral face so that the rotation reel 32 may be covered by the front side of the maintenance box 31 of the reel device 30. The panel frame 43 on the backside intervenes, inserts the EL element panel 41 into the panel frame 42 by the side of front, and is being fixed while being formed in the shape of a curving surface along the peripheral face of the rotation reel 32 of the reel device 30. Therefore, the EL element panel 41 curves along the peripheral face of the rotation reel 32 of the reel device 30 in the state where it was inserted and held with the two panel frames 42 and 43 approximately [this]. Each block frames a1-a3 of this EL element panel 41, b1-b3, c1 - c3 surround the pattern of the rotation reel 32 corresponding, respectively.

[0023] Drawing 6 shows the composition of the control system of the above-mentioned slot machine A. In this figure, the main control base sheet 36 has CPU, ROM, RAM, etc., While controlling the reel device 30, the reel lighting system 61, and the various digital display machines 11-13, receiving the signal from the game operation implement of start lever 17 grade, the loudspeaker 28 is controlled via the loudspeaker drive circuit 62. Although the reel lighting system 61 is not shown in detail by a diagram, it begins to illuminate the pattern of rotation reel 32 peripheral face of the reel device 30 from the inside of the rotation reel 32, or is beginning to illuminate it from the outside (for example, the rear-face side of the front door 2).

[0024] The above-mentioned main control base sheet 36 controls the EL element panel 41 via the panel control board 44 while controlling the hopper device 37 via the hopper control board 63 further. The hopper control board 63 has sub CPU, ROM, RAM, etc., and controls the hopper drive 37 based on the command signal from the main control base sheet 36, and the detecting signal from the hopper expenditure sensor 64. Similarly the panel control board 44 has sub CPU, ROM, RAM, etc., and controls the EL element panel 41 based on the command signal from the main control base sheet 36. Lighting processing control of this EL element panel 41 is performed according to the flow

chart shown in drawing 7. Hereafter, this flow chart is explained.

[0025]That is, in drawing 7, after waiting to throw the medal of the first sheet into the medal slot 16 at Step S1 first, the block frame a2 of the middle of the EL element panel 41, b2, and c2 are turned on in red by Step S2. Then, if it judges whether the start lever 17 was operated and is not operated at Step S3, it is judged whether the handsome medal was further thrown in by step S4. When a handsome medal is thrown in without operating the start lever 17, at Step S5, it is green and the block frame a1 of the upper row of the EL element panel 41, b1, c1 and the block frame a3 of the lower berth, b3, and c3 are turned on.

[0026]Next, if it judges whether the start lever 17 was operated again and is not operated at Step S6, it is judged whether the medal of the actor playing a comic role was further thrown in at Step S7. When the medal of an actor playing a comic role is thrown in without operating the start lever 17, the block frame a1 of the upper row of the EL element panel 41, b1, c1 and the block frame a3 of the lower berth, b3, and c3 are switched to a red light from green at Step S8. It waits to operate the start lever 17 by step S9 after an appropriate time.

[0027]When the judgment of either the above-mentioned step S3, S6 and S9 is YES (i.e., when the start lever 17 is operated after an injection of a medal), Lots are cast at Step S10, and after rotating the rotation reel 32 of the reel device 30 at Step S11, based on the above-mentioned lottery result, game processing is performed at Step S12. In this game processing, the rotation reel 32 to which the reel device 30 is equivalent by the pushing operation of the stop button 18 is stopped. Then, all the block frames a1-a3 of the EL element panel 41, b1-b3, c1 - c3 are switched off at Step S13, and 1 time of a game is ended.

[0028]Although the flow chart of drawing 7 shows the case where throw a medal into the medal slot 16 and a game is performed, when operation of the credit buttons 19-21 performs a game instead of a medal injection, lighting processing of the EL element panel 41 is performed similarly. Namely, when the block frame a2 of the middle of the EL element panel 41, b2, and c2 will light up in red if 1 bed button 19 is pushed, and 2 bed button 20 is pushed, the block frame a2 of the middle of the EL element panel 41, b2, and c2 in red. If the block frame a1 of the upper row and the lower berth, a3, b1, b3, c1, and c3 are green, they light up, respectively and push 3 bed button 21, all the block frames a1-a3 of the EL element panel 41, b1-b3, c1 - c3 will light up in red.

[0029]Therefore, in the slot machine A of a 1st embodiment of the above, When operating the start lever 17 and performing a game after throwing a medal of one sheet into the medal slot 16 or pushing 1 bed button 19, Only the three block frames a2 of the middle, b2, and c2 light up in red among the nine block frames a1-a3 of the EL element panel 41 of the display device 40 arranged to the reel display window 10 rear-face side of the front door 2, b1-b3, c1 - c3. When operating the start lever 17 and performing a game after throwing a medal of two sheets into the medal slot 16 or pushing 2 bed button 20, While the three block frames a2 of the middle, b2, and c2 light up in red, the six block frames a1 of the upper row and the lower berth, a3, b1, b3, c1, and c3 are green, and they light up. When operating the start lever 17 and performing a game after throwing a medal of three sheets into the medal slot 16 or pushing 3 bed button 21, all of the nine block frames a1-a3, b1-b3, c1 - c3 light up in red.

[0030]and the EL element panel 41 and the panel frames 42 and 43 of the above-mentioned display device 40 are all transparent, since it is, These will be penetrated and the three rotation reels 32 of the reel device 30 will appear from the reel display window 10 with the block frames a1-a3 which it was [being red or] green and were turned on, b1-b3, c1 - c3. When the rotation reel 32 stops especially, every three patterns of each rotation reel 32 are in sight in the state where it was surrounded by the block frames a1-a3, b1-b3, c1 - c3, respectively. For this reason, even when a winning line is not printed by the reel display window 10 of the control house panel 7 like the former, the game person can distinguish easily a mutual difference during the time of an one-sheet injection of a medal, a two-sheet injection, and a three-sheet injection. In addition to a 9-block frame display, of course, a winning line may be printed as usual to the reel display window 10 of the control house

panel 7.

[0031] Since the above-mentioned display device 40 approaches rotation reel 32 slippage of the reel device 30 in the case 1 and is moreover arranged from the 7th page of the control house panel of the front door 2, Distance between the EL element panel 41 of this display device 40 and the peripheral face of the rotation reel 32 can be shortened, and the gap of physical relationship with each block frames a1-a3 of the EL element panel 41, b1-b3, c1 - c3, and the pattern of rotation reel 32 peripheral face corresponding to it can be lost as much as possible, A clear display can be performed. Since it is formed in the shape of [to which the EL element panel 41 was along the peripheral face of the rotation reel 32 in the state where it was inserted between the panel frames 42 and 43, especially at this embodiment] a curving surface, Distance between the peripheral face and EL element panel 41 can be made regularly along the peripheral face of the rotation reel 32, and clear-ization of a display can be attained further.

[0032] Since the above-mentioned display device 40 is attached to the maintenance box 31 of the reel device 30 which is the case 1 side, the number of the parts attached to the rear-face side of the front door 2 with this display device 40 does not increase, and it does not cause complication of structure. Since the control house panel 7 of the front door 2 achieves the duty which protects this ahead [of the display device 40], the influence by external force when a game person etc. hit the control house panel 7 can be avoided, and breakage prevention of the display device 40 can be planned.

[0033] Drawing 8 shows the slot machine B concerning a 2nd embodiment of this invention. Although this slot machine B only differs in the EL element panel 71 of the display device 40 arranged between the slot machine A and a front door concerning a 1st embodiment, and the reel device 30 in the case 1 and is explained below about that composition, Since other composition is completely the same, identical codes are given to the same component and the explanation is omitted. In the following explanation, a mark given to it with reference to drawing 1 is quoted about a component and parts by the side of a front door.

[0034] Namely, the above-mentioned EL element panel 71 so that it may show in detail to drawing 9 and drawing 10, A total of five winning lines L1 of three width and two slant, L2, L3, L4, and L5 are arranged on the film 72 with transparent rectangular shape, and each of these winning lines L1-L5 form an EL element as a linear light-emitting part in linear shape. This EL element on the film 72 as well as it of the slot machine A which shows drawing 5, A rear electrode (equivalent to 51 in drawing 5), if an insulating layer (said — 52), a luminous layer (said — 53), and a surface electrode (said — 54) are laminated one by one and predetermined voltage is impressed between a rear electrode and a surface electrode, a luminous layer will emit light in red (or green). Each lead connected to the above-mentioned rear electrode, a surface electrode, and these is transparent, A lead connected to an electrode of each winning lines L1-L5 is connected to the one band-like cable 73 at the left end of the EL element panel 71, and the connector 74 is formed at a tip of this cable 73.

[0035] And it is arranged in the state where it curved along the peripheral face of the rotation reel 32 of the reel device 30 by pinching the EL element panel 71 with the two panel frames 42 and 43 approximately, and attaching to the front side of the maintenance box 31 of the reel device 30 via these, The winning lines L1-L5 of this EL element panel 41 are visible through the reel display window 10 of the front door 2 with every three patterns of each rotation reel 32 of the reel device 30. When the medal of one sheet is thrown into the medal slot 16 or 1 bed button 19 is pushed, When only the central winning line L1 lights up in red, and the medal of two sheets is thrown into the medal slot 16 or 2 bed button 20 is pushed, When the winning lines L1-L3 of three width light up in red, and the medal of three sheets is further thrown into the medal slot 16 or 3 bed button 21 is pushed, the five winning lines L1-L5 light up in red altogether.

[0036] Also in such a slot machine B, like the case of the slot machine A concerning a 1st embodiment, While being able to eliminate the gap of physical relationship with the winning lines L1-L5 of the EL element panel 71, and the pattern of rotation reel 32 peripheral face corresponding to

it as much as possible and being able to attain clear-ization of a display, Of course, the effect of being able to plan breakage prevention of the display device 40 under the influence of external force is done so.

[0037]In 1st and 2nd embodiments of the above, as display information by the display device 40 arranged between the reel display window 10 of the front door 2, and the reel device 30 by the side of the case 1, Although the lighted indication of the block frames a1-a3, b1-b3, c1 - c3 was carried out or the lighted indication of the winning lines L1-L5 was carried out instead of the winning line which carried out the printing display also of any to the conventional **** reel display window 10, It may be made for this invention to display the information relevant to game contents other than this winning line display. For example, it is made to make the reliability identify at the same time it notifies of flag formation by combining the lighting number of the block frames a1-a3, b1-b3, c1 - c3, and the difference in a color, or changing the luminescent color of the winning lines L1-L5, or performing a blink shift so that it may run a line top. Multicolor blink etc. are performed at the time of great success, and a winning-a-prize pattern is emphasized, or all of the block frames a1-a3, b1-b3, c1 - c3 are blinked, and it appeals.

[0038]In each above-mentioned embodiment, although each used the EL element panels 41 and 71 as a linear light-emitting part of the display device 40, the panel which arranges linear LED or an optical fiber etc. may be used for a transparent panel instead of being these EL element panels 41 and 71. A liquid crystal shutter may be used as the display device 40.

[0039]This invention is applicable not only to a slot machine but the thing which used the reel device for the variable display device in the pachinko machine like each above-mentioned embodiment. In this case, what is necessary is just to also attach to a game board the display device arranged between a reel device and the reel display window of a game board, since a reel device is attached to the rear-face side of the game board as the front panel.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a front view of the slot machine concerning a 1st embodiment of this invention.

[Drawing 2]It is a perspective view in the state where the front door of the above-mentioned slot machine was removed.

[Drawing 3]It is an exploded perspective view of the display device attached to the reel device of the above-mentioned slot machine.

[Drawing 4]It is a front view of the EL element panel of the above-mentioned display device.

[Drawing 5]It is an expanded sectional view in the X-X line of drawing 4.

[Drawing 6]It is a block block diagram of the control system of a slot machine.

[Drawing 7]It is a flow chart figure of lighting processing control of an EL element panel.

[Drawing 8]It is the drawing 2 equivalent figure showing a 2nd embodiment.

[Drawing 9]Similarly it is the drawing 3 equivalent figure.

[Drawing 10]Similarly it is the drawing 4 equivalent figure.

[Explanations of letters or numerals]

A and B Slot machine (game machine)

1 Case

2 Front door

7 Control house panel (front panel)

10 Reel display window

30 Reel device

31 Maintenance box (attaching part)

32 Rotation reel

40 Display device

41, 71 EL-element panel

a1-a3, b1-b3, c1 - c3 block frame (light-emitting part)

L1 - L5 winning line (light-emitting part)

[Translation done.]

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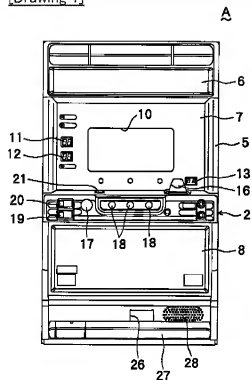
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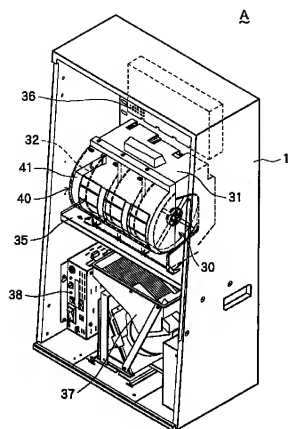
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DRAWINGS

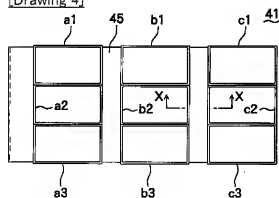
[Drawing 1]



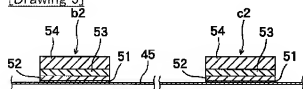
[Drawing 2]



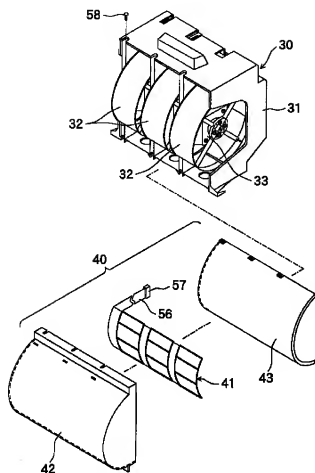
[Drawing 4]



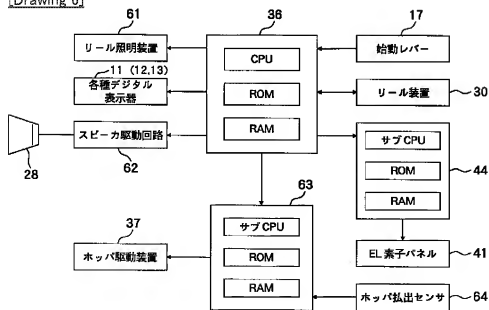
[Drawing 5]



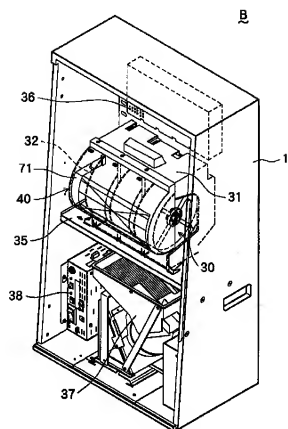
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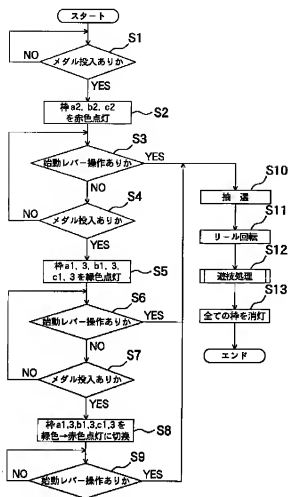
[Drawing 6]



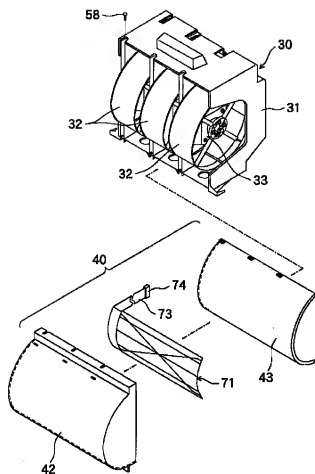
[Drawing 8]



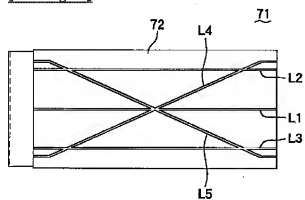
[Drawing 7]



[Drawing 9]



[Drawing 10]



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CORRECTION OR AMENDMENT

[Kind of official gazette]Printing of amendment by regulation of Patent Law Article 17 of 2

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512 F

[Written Amendment]

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[Amendment 1]

[Document to be Amended]Description

[Item(s) to be Amended]Claim 2

[Method of Amendment]Change

[Proposed Amendment]

[Claim 2]The above-mentioned reel device has an attaching part which is fixed to a case of a slot machine and supports a rotation reel.

The game machine according to claim 1 with which the above-mentioned display device is attached to an attaching part of this reel device.

[Amendment 2]

[Document to be Amended]Description

[Item(s) to be Amended]0011

[Method of Amendment]Change

[Proposed Amendment]

[0011]Invention which relates to Claim 2 in order to solve the 2nd SUBJECT of the above, In the game machine according to claim 1, the above-mentioned reel device has an attaching part which is fixed to the case of the slot machine as a game machine, and supports a rotation reel, and has composition which attaches the above-mentioned display device to the attaching part of this reel device.

[Amendment 3]

[Document to be Amended]Description

[Item(s) to be Amended]0012

[Method of Amendment]Change

[Proposed Amendment]

[0012]In this composition, since the display device is attached to the attaching part of the reel device which is a case side, the number of the parts attached to the rear face of the front panel with this display device does not increase, and it does not cause complication of structure. The front panel will achieve the duty which protects a display device, and the influence by external force is avoided.

[Amendment 4]

[Document to be Amended]Description

[Item(s) to be Amended]0022

[Method of Amendment]Change

[Proposed Amendment]

[0022]Both the two panel frames 42 and 43 consist of transparent synthetic resins before and after the above. The upper part and the lower part are attached to it by the screw 58 stop in contact with the front tip part of the maintenance box 31, respectively while the panel frame 42 by the side of front is formed in the shape of a curving surface along the peripheral face so that the rotation reel 32 may be covered by the front side of the maintenance box 31 of the reel device 30. The panel frame 43 on the backside intervenes, inserts the EL element panel 41 into the panel frame 42 by the side of front, and is being fixed while being formed in the shape of a curving surface along the peripheral face of the rotation reel 32 of the reel device 30. Therefore, the EL element panel 41 curves along the peripheral face of the rotation reel 32 of the reel device 30 in the state where it was inserted and held with the two panel frames 42 and 43 approximately [this]. Each block frames a1-a3 of this EL element panel 41, b1-b3, c1 - c3 surround the pattern of the rotation reel 32 corresponding, respectively.

[Amendment 5]

[Document to be Amended]Description

[Item(s) to be Amended]0035

[Method of Amendment]Change

[Proposed Amendment]

[0035]And it is arranged in the state where it curved along the peripheral face of the rotation reel 32 of the reel device 30 by pinching the EL element panel 71 with the two panel frames 42 and 43 approximately, and attaching to the front side of the maintenance box 31 of the reel device 30 via these, The winning lines L1-L5 of this EL element panel 71 are visible through the reel display window 10 of the front door 2 with every three patterns of each rotation reel 32 of the reel device 30. When the medal of one sheet is thrown into the medal slot 16 or 1 bed button 19 is pushed, When only the central winning line L1 lights up in red, and the medal of two sheets is thrown into the medal slot 16 or 2 bed button 20 is pushed, When the winning lines L1-L3 of three width light up in red, and the medal of three sheets is further thrown into the medal slot 16 or 3 bed button 21 is pushed, the five winning lines L1-L5 light up in red altogether.

[Amendment 6]

[Document to be Amended]Description

[Item(s) to be Amended]0041

[Method of Amendment]Change

[Proposed Amendment]

[0041]By attaching a display device to the attaching part of the reel device which is a case side of a slot machine especially in invention concerning Claim 2, Enforcement-ization can be attained easily, without causing **** of the number of fittings on the rear face of the front panel of a slot machine.

and by extension, complication of structure, and it has simultaneously the effect that the influence by external force is avoidable etc.

[Translation done.]

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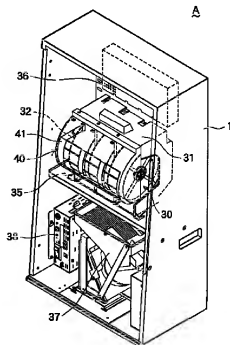
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(54)【発明の名称】 遊技機

(57)【要約】

【課題】 表示装置による表示が遊技者に不自然かつ不完全なイメージを与えないようにし、もって表示効果を高め得る遊技機を提供する。

【解決手段】 遊技機Aは、リール表示窓を形成したフロントパネルの裏面側に、複数の回転リールを有するリール装置30が配置され、このリール装置の各回転リール32に描かれた複数の図柄がフロントパネルのリール表示窓を通して見えるように構成されている。上記フロントパネルのリール表示窓とリール装置との間に、遊技内容に関連する情報をリール装置の各回転リールの図柄と共にリール表示窓を通して表示する表示装置40を配置する。



【特許請求の範囲】

【請求項1】 リール表示窓を形成したフロントパネルの裏面側に、複数の回転リールを有するリール装置が配置され、このリール装置の各回転リールに描かれた複数の図柄がフロントパネルのリール表示窓を通して見えるように構成された遊技機において、

上記フロントパネルのリール表示窓とリール装置との間には、遊技内容に関連する情報をリール装置の各回転リールの図柄と共にリール表示窓を通して表示する表示装置が配置されていることを特徴とする遊技機。

【請求項2】 リール表示窓を形成したフロントパネルを有する前扉が筐体内部に開閉可能に取り付けられているとともに、この筐体内部には前扉のフロントパネルの裏面側に複数の回転リールを有するリール装置が配置され、このリール装置の各回転リールに描かれた複数の図柄がフロントパネルのリール表示窓を通して見えるように構成された遊技機において、

上記フロントパネルのリール表示窓とリール装置との間には、遊技内容に関連する情報をリール装置の各回転リールの図柄と共にリール表示窓を通して表示する表示装置が配置され、この表示装置は、リール装置の保持部に取り付けられていることを特徴とする遊技機。

【請求項3】 上記表示装置は、透明なパネルに線状の発光部を設けてなる請求項1又は2記載の遊技機。

【請求項4】 上記表示装置は、回転リールの外周面に沿った湾曲面状に形成されている請求項1〜3のいずれか一つに記載の遊技機。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、スロットマシン等の遊技機に関し、特に回転リールに描かれた複数の図柄がフロントパネルのリール表示窓を通して見えるものに係る。

【0002】

【従来の技術】 一般に、スロットマシンにおいては、リール表示窓を形成したフロントパネルを有する前扉が筐体内部に開閉可能に取り付けられているとともに、この筐体内部における前扉のフロントパネルの裏面側に3つの回転リールを有するリール装置が配置され、このリール装置の各回転リールに描かれた3つの図柄がそれぞれフロントパネルのリール表示窓を通して見えるようになっている。そして、フロントパネルのリール表示窓には横3本と斜め2本の計5本の入賞ラインが印刷されており、この5本の入賞ラインのうち、メダルの投入数等に応じて有効化されたラインに沿ってリール装置の各回転リールの図柄が所定の組み合わせによって停止した場合に所定枚数のメダルが払い出される。

【0003】 また、パチンコ機においても、その可変表示装置にリール装置を用いたものがある。このリール装置は、スロットマシン用のものよりも小型でフロントパ

ネルとしての遊技盤の裏面側に取り付けられており、リール装置の各回転リールに描かれた複数の図柄が遊技盤に形成したリール表示窓を通して見えるようになってくる。

【0004】

【発明が解決しようとする課題】 ところが、上記従来の遊技機では、リール装置の回転リールの外周面とフロントパネルのリール表示窓との間にある程度の距離があるため、特に入賞ラインのうち斜めラインではリール装置の各回転リールの図柄が並んで停止した位置とライン位置とのずれが両端で大きくなり、遊技者に不自然かつ不完全なイメージを与えるのを避け切れなかった。

【0005】 また、スロットマシンの場合、前扉のフロントパネルのリール表示窓は遊技者の視線を最も集める所であることから、このリール表示窓に設ける入賞ラインあるいは表示窓自体に遊技の演出機能を持たせ、遊技の多様性に寄与させるようにしたもののが種々提案されている。例えば特開平4-109977号公報には、フロントパネルのリール表示窓に入賞ラインを構成する光ファイバーを設け、メダルの投入数等に応じて有効化された入賞ラインを発光表示することが開示されている。また、特許第2668067号公報には、リール表示窓を構成する液晶シャッターをフロントパネルに取り付け、ゲーム開始時には液晶シャッターを透明にしてリール装置の各回転リール毎3つずつの図柄が全て液晶シャッターを通して見え、ゲーム終了時には入賞の組み合わせに無関係な図柄に対応する表示窓の部分を不透明にすることが開示されている。

【0006】 しかし、このような提案のものは、いずれも前扉のフロントパネルの裏面に光ファイバーや液晶シャッターなどの部品を取り付けることとしているが、このフロントパネルの裏面には既に各種表示器などの部品が取り付けられており、取付部品の追加により構造が複雑化するなどの問題がある。また、前扉のフロントパネルは外力の影響を受け易いため、このフロントパネルの裏面に取り付けた部品の破損の虞が大きくなるという問題もある。

【0007】 本発明はかかる諸点に鑑みてなされたものであり、その第1の課題は、入賞ラインなどを表示する表示装置をフロントパネル内よりもリール装置の回転リール寄り近づけることにより、その表示装置による表示が遊技者に不自然かつ不完全なイメージを与えないように、もって表示効果を高め得る遊技機を提供するものである。

【0008】 本発明の第2の課題は、特にスロットマシンにおいて、上述した第1の課題に加えて、表示装置の取付箇所を適宜設定して、構造の複雑化を招くことなく実施化を図り易くするものである。

【0009】

【課題を解決するための手段】 上記第1の課題を解決す

るため、請求項1に係る発明は、リール表示窓を形成したフロントパネルの裏面側に、複数の回転リールを有するリール装置が配置され、このリール装置の各回転リールに描かれた複数の図柄がフロントパネルのリール表示窓を通して見えるように構成された遊技機において、上記フロントパネルのリール表示窓とリール装置との間に、遊技内容に関連する情報をリール装置の各回転リールの図柄と共にリール表示窓を通して表示する表示装置を配置する構成とする。

【0010】この構成では、遊技内容に関連する情報をリール装置の各回転リールの図柄と共にリール表示窓を通して表示する表示装置がフロントパネルのリール表示窓とリール装置との間、つまりフロントパネル面よりもリール装置の回転リール寄りに近づいて配置されているため、この表示装置の表示面と回転リール外周面の図柄との間の距離が短くなり、相互の位置関係のずれがなくなる。

【0011】また、上記第2の課題を解決するため、請求項2に係る発明は、リール表示窓を形成したフロントパネルを有する前扉が筐体に開閉可能に取り付けられているとともに、この筐体内部におけるフロントパネルの裏面側に複数の回転リールを有するリール装置が配置され、このリール装置の各回転リールに描かれた複数の図柄がフロントパネルのリール表示窓を通して見えるように構成された遊技機つまりスロットマシンにおいて、上記フロントパネルのリール表示窓とリール装置との間に、遊技内容に関連する情報をリール装置の各回転リールの図柄と共にリール表示窓を通して表示する表示装置を配置し、かつこの表示装置をリール装置の保持部に取り付ける構成とする。

【0012】この構成では、請求項1に係る発明の場合と同様に表示装置がフロントパネル面よりもリール装置の回転リール寄りに近づいて配置されているため、この表示装置の表示面と回転リール外周面の図柄との間の距離が短くなり、相互の位置関係のずれがなくなる。しかも、表示装置は、筐体側であるリール装置の保持部に取り付けられているため、この表示装置によりフロントパネルの裏面に取り付けられる部品数が増加することはない。また、前扉のフロントパネルが表示装置を保護する役目を果たすことになり、外力による影響が回避される。

【0013】請求項3に係る発明は、請求項1又は2記載の遊技機において、上記表示装置の好ましい形態を提供する。すなわち、上記表示装置を、透明なパネルに線状の発光部（例えばLED素子、LED又は光ファイバーなど）を設けて構成する。この構成では、表示装置の透明なパネルによりリール装置の各回転リールの図柄を透過させながら、表示装置の線状の発光部により遊技内容に関連する情報を発光表示することにより、各回転リールの図柄と遊技内容に関連する情報とが合わさった状態

でフロントパネルのリール表示窓を通して見えることになる。その上、液晶シャッターを用いて表示装置を構成する場合に比べて制御などが容易であり、またコスト的にも安価で済むことになる。

【0014】請求項4に係る発明は、請求項1〜3のいずれか一つに記載の遊技機において、上記表示装置を、回転リールの外周面に沿った曲面形状に形成する構成とする。この構成では、回転リールの外周面に沿ってその外周面と表示装置の表示面との間の距離を一定にすることができ、相互の位置関係のずれがより確実になくなる。

【0015】

【発明の実施の形態】以下、本発明の実施の形態を図面に基づいて説明する。図1及び図2は本発明の第1の実施形態に係る遊技機としてのスロットマシンAを示し、このスロットマシンAは、筐体1の前開口部を前扉2がその左側をヒンジ側として開閉可能に取り付けられている。

【0016】上記前扉2は、アルミニウム等の金属を鍛造し、あるいは鋳造成型して枠本体5を構成し、この枠本体5にフロントパネルとして上部パネル6、中央パネル7及び下部パネル8をそれぞれ取り付け付ける。上部パネル6には当たり図柄等が印刷されている。中央パネル7には、その中央部にリール表示窓10が設けられているとともに、このリール表示窓10の周囲に各々デジタル表示器からなるクレジット枚数表示器11、払出枚数表示器12及び役物当選回数表示器13等が設けられている。この中央パネル7と装飾模様を施してなる下部パネル8との間には遊技操作具としてメダル投入口16、始動レバー17、3個のストップボタン18、18、18、18、18、18、2個のストップボタン19、2個のストップボタン20及び3個のストップボタン21が設けられており、下部パネル8の下方にはメダル払出口26、メダル受け皿27及びスピーカ28等が設けられている。

【0017】上記前扉2の裏面側には、図示していないが、中央パネル7のリール表示窓10の周囲に各種デジタル表示器11〜13等の電気部品及び遊技操作具のリード線などを収納する電気部品類ボックスが取り付けられているとともに、下部パネル8に対応してその照明灯を収納する照明灯ボックスが取り付けられている。また、スピーカ28を収納するスピーカボックス及びメダル払出口26からメダルの払い出しなどを行うためのメダル通路等も取り付けられている。

【0018】一方、上記筐体1内には、上記リール表示窓10に対向してリール装置30が配置されている。このリール装置30は、図3にも示すように、前方に開口する保持ボックス31内に3つの回転リール32、32、32を水平方向の軸線上に並べかつ独立して回転自在に支持してなり、各回転リール32の外周面にはそれぞれ複数の図柄（図示せず）が施されている。また、各

回転リール 32 の内部にはそれを独自に回転させるステップモータ 33 が配置されている。そして、前扉 2 を閉じた状態で各回転リール 32 毎 3 つずつ計 9 つの図柄がそれぞれ前扉 2 のリール表示窓 10 を通して見るとともに、メダル投入後の始動レバー 17 の操作により 3 つの回転リール 32、32、32 が一斉に回転し、各ストップボタン 18 の押し操作により対応する回転リール 32 が個別に停止するようになっている。

【0019】上記リール装置 30 の保持ボックス 31 は、筐体 1 内に設けたリール設置棚 35 の上に固定されている。筐体 1 内には、リール装置 30 の他に、リール設置棚 35 より上側に主制御基板 36 が配置されているとともに、リール設置棚 35 より下側にホップ駆動装置 37 及び配電盤 38 が配置されている。

【0020】そして、本発明の特徴点として、上記前扉 2 のリール表示窓 10 とリール装置 30 との間には、遊技内容に関連する情報としての 9 ブロック枠をリール装置 30 の各回転リール 32 毎 3 つずつ計 9 つの図柄と共にリール表示窓 10 を通して表示する表示装置 40 が配置されている。この表示装置 40 は、EL 素子パネル 41 と、この EL 素子パネル 41 を表囲と裏囲とから挟んで保持する前後 2 つのパネル枠 42、43 とを有している。

【0021】上記 EL 素子パネル 41 は、図 4 及び図 5 に詳示するように、矩形形状の透明なフィルム 45 上にリール装置 30 の各回転リール 32 毎 3 つずつ計 9 つの図柄にそれぞれ対応した 9 個のブロック枠 a1、a2、a3、b1、b2、b3、c1、c2、c3 を配置してなり、各ブロック枠 a1～a3、b1～b3、c1～c3 は、線状の発光部としての EL 素子を矩形形状に形成してなる。この EL 素子は、フィルム 45 上に裏面電極 51、絶縁層 52、発光層 53 及び表面電極 54 を順次積層してなり、裏面電極 51 と表面電極 54 との間に所定の電圧を印加すると発光層 53 が発光しかつ印加電圧の変化により発光色が少くとも赤色と緑色の二色に変化する。上記裏面電極 51 及び表面電極 54 並びにこれらに接続されたリード線はいずれも透明なものであり、各ブロック枠 a1～a3、b1～b3、c1～c3 の電極 51、54 に接続されたリード線は EL 素子パネル 41 の左端で一つの帯状のケーブル 56 に接続され、このケーブル 56 の先端には表示装置 40 のパネル制御基板 44 (図 6 参照) と接続するためのコネクタ 57 が設けられている。

【0022】上記前後 2 つのパネル枠 42、43 は共に透明な ABS 等の合成樹脂からなる。前側のパネル枠 42 は、リール装置 30 の保持ボックス 31 の前側で回転リール 32 を覆うようにその外周面に沿って湾曲面状に形成されているとともに、上部及び下部をそれぞれ保持ボックス 31 の前縁部に当接してネジ 58 止めにより取り付けられている。また、後側のパネル枠 43 は、リール

装置 30 の回転リール 32 の外周面に沿って湾曲面状に形成されているとともに、EL 素子パネル 41 を介して前側のパネル枠 42 内挿入して固定されている。よって、EL 素子パネル 41 は、この前後 2 つのパネル枠 42、43 で挟んで保持された状態でリール装置 30 の回転リール 32 の外周面に沿って湾曲し、この EL 素子パネル 41 の各ブロック枠 a1～a3、b1～b3、c1～c3 は、それぞれ対応する回転リール 32 の図柄を囲むようになっている。

【0023】図 6 は上記スロットマシン A の制御系の構成を示す。この図において、主制御基板 36 は CPU、ROM 及び RAM 等を有してなり、始動レバー 17 等の遊技操作具からの信号を受けながらリール装置 30、リール照明装置 61 及び各種デジタル表示器 11～13 を制御するとともに、スピーカ駆動回路 62 を介してスピーカ 28 を制御する。リール照明装置 61 は、図で詳示していないが、リール装置 30 の回転リール 32 外周面の図柄を回転リール 32 の内部から照らし出すか、あるいは外部 (例えば前扉 2 の裏面側) から照らし出すようになっている。

【0024】上記主制御基板 36 は、更にホップ制御基板 63 を介してホップ駆動装置 37 を制御するとともに、パネル制御基板 44 を介して EL 素子パネル 41 を制御する。ホップ制御基板 63 はサブ CPU、ROM 及び RAM 等を有してなり、主制御基板 36 からの指令信号とホップ払出センサ 64 からの検出信号とに基づいてホップ駆動装置 37 を制御する。また、パネル制御基板 44 も同じくサブ CPU、ROM 及び RAM 等を有してなり、主制御基板 36 からの指令信号に基づいて EL 素子パネル 41 を制御する。この EL 素子パネル 41 の点灯処理制御は、図 7 に示すフローチャートに従って行われる。以下、このフローチャートについて説明する。

【0025】すなわち、図 7 において、先ずステップ S1 でメダル投入口 16 に一枚目のメダルが投入されるのを待った後、ステップ S2 で EL 素子パネル 41 の中段のブロック枠 a2、b2、c2 を赤色で点灯する。続いて、ステップ S3 で始動レバー 17 が操作されたか否かを判定し、操作されていない場合は更にステップ S4 で二枚目のメダルが投入されたか否かを判定する。始動レバー 17 が操作されずに二枚目のメダルが投入されたときには、ステップ S5 で EL 素子パネル 41 の上段のブロック枠 a1、b1、c1 及び下段のブロック枠 a3、b3、c3 を緑色で点灯する。

【0026】次に、ステップ S6 で再度始動レバー 17 が操作されたか否かを判定し、操作されていない場合は更にステップ S7 で三枚目のメダルが投入されたか否かを判定する。始動レバー 17 が操作されずに三枚目のメダルが投入されたときには、ステップ S8 で EL 素子パネル 41 の上段のブロック枠 a1、b1、c1 及び下段のブロック枠 a3、b3、c3 を緑色から赤色点灯に切り

換える。しかる後、ステップS9で始動レバー17が操作されるのを待つ。

【0027】上記ステップS3、S6及びS9のいずれかの判定がYESのとき、つまりメダルの投入後に始動レバー17が操作されたときには、ステップS10で抽選を行い、ステップS11でリール装置30の回転リール32を回転させた後、ステップS12で上記抽選結果に基づいて遊技処理を行う。この遊技処理では、ストップボタン18の押し操作によりリール装置30の対応する回転リール32を停止させる。その後、ステップS13でE.L.素子パネル41の全てのブロック枠a1～a3、b1～b3、c1～c3を消灯し、一回の遊技を終了する。

【0028】尚、図7のフローチャートでは、メダル投入口16にメダルを投入して遊技を行う場合を示しているが、メダル投入の代わりにクレジットボタン19～21の操作により遊技を行う場合にも同様にE.L.素子パネル41の点灯処理が行われる。すなわち、1ベットボタン19を押すとE.L.素子パネル41の中段のブロック枠a2、b2、c2が赤色で点灯し、2ベットボタン20を押すとE.L.素子パネル41の中段のブロック枠a2、b2、c2が赤色で、上段及び下段のブロック枠a1、a3、b1、b3、c1、c3が緑色でそれぞれ点灯し、3ベットボタン21を押すとE.L.素子パネル41の全てのブロック枠a1～a3、b1～b3、c1～c3が赤色で点灯する。

【0029】従って、上記第1の実施形態のスロットマシンにおいては、メダル投入口16に1枚のメダルを投入し、あるいは1ベットボタン19を押した後、始動レバー17を操作して遊技を行うときには、前扉2のリール表示窓10裏面側に配置した表示装置40のE.L.素子パネル41の9個のブロック枠a1～a3、b1～b3、c1～c3のうち、中段の3個のブロック枠a2、b2、c2のみが赤色で点灯する。また、メダル投入口16に2枚のメダルを投入し、あるいは2ベットボタン20を押した後、始動レバー17を操作して遊技を行うときには、中段の3個のブロック枠a2、b2、c2が赤色で点灯するとともに、上段及び下段の6個のブロック枠a1、a3、b1、b3、c1、c3が緑色で点灯する。更に、メダル投入口16に3枚のメダルを投入し、あるいは3ベットボタン21を押した後、始動レバー17を操作して遊技を行うときには、9個のブロック枠a1～a3、b1～b3、c1～c3が全て赤色で点灯する。

【0030】そして、上記表示装置40のE.L.素子パネル41及びパネル枠42、43はいずれも透明なものであるので、これらを通じてリール装置30の3つの回転リール32が、赤色又は緑色で点灯したブロック枠a1～a3、b1～b3、c1～c3と共にリール表示窓10から見えることになる。特に、回転リール32が停止

したときには、各回転リール32の3つずつの図柄がそれぞれブロック枠a1～a3、b1～b3、c1～c3で囲まれた状態に見える。このため、中央パネル7のリール表示窓10に従来の如く入賞ラインが印刷されていない場合でも、遊技者はメダルの1枚投入時と2枚投入時と3枚投入時との間の相互の違いを容易に区別することができる。尚、9ブロック枠表示に加えて中央パネル7のリール表示窓10に従来の通り入賞ラインを印刷してもよいのは勿論である。

【0031】その上、上記表示装置40は前扉2の中央パネル7面よりも筐体1内のリール装置30の回転リール32寄りに近づいて配置されているため、この表示装置40のE.L.素子パネル41と回転リール32の外周面との間の距離を短くしてE.L.素子パネル41の各ブロック枠a1～a3、b1～b3、c1～c3とそれに対応する回転リール32外周面の図柄との位置関係のずれを可及的になくすることができ、明瞭な表示を行うことができる。特に、本実施形態では、E.L.素子パネル41がパネル枠42、43間に挟まれた状態で回転リール32の外周面に沿った湾曲面状に形成されているので、回転リール32の外周面に沿ってその外周面とE.L.素子パネル41との間の距離を一定にすることができ、表示の明瞭化を一層図ることができる。

【0032】さらに、上記表示装置40は、筐体1側であるリール装置30の保持ボックス31に取り付けられているため、この表示装置40により前扉2の裏面側に取り付けられる部品の数が増加することなく、構造の複雑化を招くこともない。また、前扉2の中央パネル7が表示装置40の前方でこれを保護する役目を果たするので、遊技者等が中央パネル7に当たったときなどの外力による影響を回避することができ、表示装置40の破損防止を図ることができる。

【0033】図8は本発明の第2の実施形態に係るスロットマシンBを示す。このスロットマシンBは、第1の実施形態に係るスロットマシンAと、前扉1内のリール装置30との間に配置される表示装置40のE.L.素子パネル71が異なるだけであり、その構成について以下に説明するが、その他の構成は全く同じであるので、同一部材には同一符号を付してその説明は省略する。また、以下の説明では、前扉側の部材・部品については、図1を参照しそれぞれに付した符号を引用する。

【0034】すなわち、上記E.L.素子パネル71は、図9及び図10に詳示するように、矩形状の透明なフィルム72上に横3本と斜め2本の計5本の入賞ラインL1、L2、L3、L4、L5を配置してなり、この各入賞ラインL1～L5は、線状の発光部としてのE.L.素子を直線状に形成したものである。このE.L.素子は、図5に示すスロットマシンAのそれと同じく、フィルム72上に裏面電極（図5中の51に相当）、絶縁層（図52）、発光層（図53）及び表面電極（図54）を順次

積層してなり、裏面電極と表面電極との間に所定の電圧を印加すると発光層が赤色（又は緑色）で発光する。上記裏面電極及び表面電極並びにこれらに接続されたリード線はいずれも透明のものであり、各入賞ライン１～５の電極に接続されたリード線はＥＬ素子パネル７１の左端で一つの帯状のケーブル７３に接続され、このケーブル７３の先端にはコネクタ７４が設けられている。

【００３５】そして、ＥＬ素子パネル７１は、前後２つのパネル枠４２、４３で扶持しかつこれらを介してリール装置３０の保持ボックス３１の前側に取り付けられることでリール装置３０の回転リール３２の外周面に沿って湾曲した状態で配置され、このＥＬ素子パネル４１の入賞ライン１～５は、リール装置３０の各回転リール３２の３つずつの図柄と共に前扉２のリール表示窓１０を通して見える。また、メダル投入口１６に１枚のメダルを投入し、あるいは２ベットボタン２０を押したときに、機３本の入賞ライン１～５が全て赤色で点灯するようにしている。

【００３６】このようなスロットマシンＢにおいても、第１の実施形態に係るスロットマシンＡの場合と同様に、ＥＬ素子パネル７１の入賞ライン１～５とそれに対応する回転リール３２の外周面の図柄との位置関係のずれを可及的になくして、表示の明瞭化を図ることができるとともに、外力の影響による表示装置４０の破損防止を図ることができるなどの効果を奏するのは勿論である。

【００３７】尚、上記第１及び第２の実施形態では、前扉２のリール表示窓１０と筐体１側のリール装置３０との間に配置する表示装置４０による表示内容としては、いずれも従来の如きリール表示窓１０に印刷表示した入賞ラインの代わりに、ブロック枠ａ１～ａ３、ｂ１～ｂ３、ｃ１～ｃ３を点灯表示したり、入賞ライン１～５を点灯表示したりしたが、本発明は、この入賞ライン表示以外の遊技内容に関連する情報を表示するようにしてもよい。例えばブロック枠ａ１～ａ３、ｂ１～ｂ３、ｃ１～ｃ３の点灯数と色の違いとを組合せたり、入賞ライン１～５の発光色を変えたり、ライン上を走行するように点滅シフトを行ったりすることでフラグ成立の告知を行うと同時にその信頼度を識別させるようにする。また、大当たり時に多色点滅等を行って入賞図柄を引き立たせたり、ブロック枠ａ１～ａ３、ｂ１～ｂ３、ｃ１～ｃ３の全てを点滅させてアピールしたりする。

【００３８】また、上記各実施形態では、いずれも表示装置４０の線状の発光部として、ＥＬ素子パネル４１、７１を用いたが、このＥＬ素子パネル４１、７１の代わ

りに、透明なパネルに線状のＬＥＤ又は光ファイバーなどを配置してなるパネルを用いてもよい。また、表示装置４０として液晶シャッターを用いてもよい。

【００３９】さらに、本発明は、上記各実施形態の如くスロットマシンに限らず、パチンコ機において、その可変表示装置にリール装置を用いたものにも適用することができる。この場合、リール装置はフロントパネルとしての遊技盤の裏面側に取り付けられるので、リール装置と遊技盤のリール表示窓との間に配置する表示装置も遊技盤に取り付けられよい。

【００４０】

【発明の効果】以上のように、本発明の遊技機によれば、フロントパネルのリール表示窓とリール装置との間に、遊技内容に関連する情報をリール装置の各回転リールの図柄と共にリール表示窓を通して表示する表示装置を配置することにより、表示装置の表示面と回転リール外周面の図柄との間の距離を短くして相互の位置関係のずれを可及的になくすることができるので、遊技者に違和感を与えない明瞭な表示をすることができ、視認性の向上を図ることができる。

【００４１】特に、請求項２に係る発明では、スロットマシンの筐体側であるリール装置の保持部に表示装置を取り付けることにより、前扉のフロントパネル裏面の取付部品数の増加ひいては構造の複雑化を招くことなく実施化を容易に図ることができるが、また、外力による影響を回避できるなどの効果を併有する。

【００４２】請求項３に係る発明では、リール装置の各回転リールの図柄と共に遊技内容に関連する情報を確実に表示することができる上、表示の制御などが容易かつコスト的にも安価で済むので、実施化を図る上で非常に有利なものである。

【００４３】さらに、請求項４に係る発明では、回転リールの外周面に沿ってその外周面と表示装置の表示面との間の距離を一定にすることができるので、表示の明瞭化を一層図ることができる。

【図面の簡単な説明】

【図１】本発明の第１の実施形態に係るスロットマシンの正面図である。

【図２】上記スロットマシンの前扉を取り外した状態の斜視図である。

【図３】上記スロットマシンのリール装置に取り付けられる表示装置の分解斜視図である。

【図４】上記表示装置のＥＬ素子パネルの正面図である。

【図５】図４のＸ－Ｘ線における拡大断面図である。

【図６】スロットマシンの制御系のブロック構成図である。

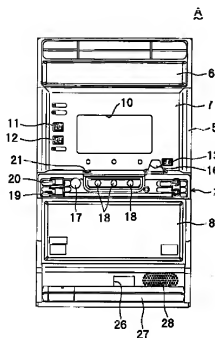
【図７】ＥＬ素子パネルの点灯処理制御のフローチャート図である。

【図８】第２の実施形態を示す図２相当図である。

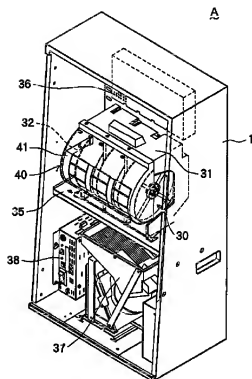
【図9】 同様に図3相当図である。
 【図10】 同様に図4相当図である。
 【符号の説明】
 A, B スロットマシン（遊技機）
 1 筐体
 2 前扉
 7 中央パネル（フロントパネル）
 10 リール表示窓

30 リール装置
 31 保持ボックス（保持部）
 32 回転リール
 40 表示装置
 41, 71 EL素子パネル
 a1~a3, b1~b3, c1~c3 ブロック枠
 （発光部）
 L1~L5 入賞ライン（発光部）

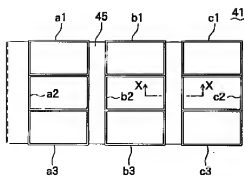
【図1】



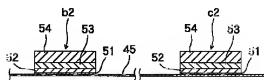
【図2】



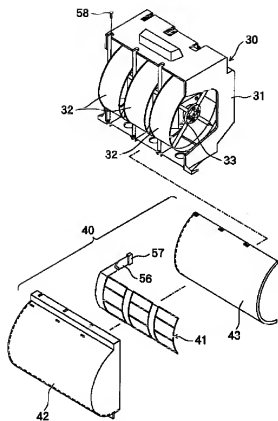
【図4】



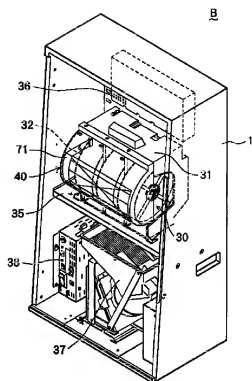
【図5】



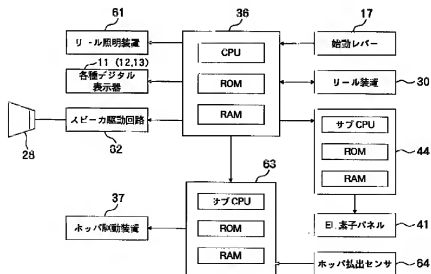
【圖3】



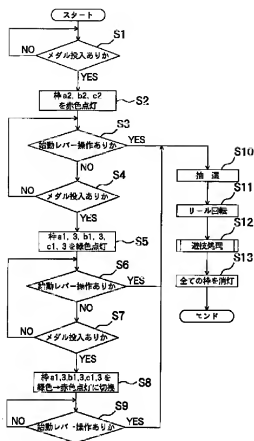
【图8】



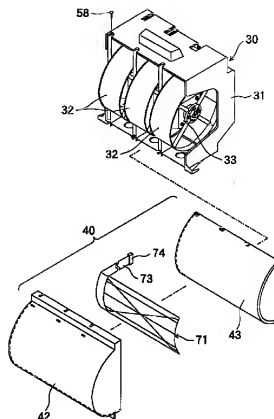
【図6】



【図7】



【図9】



【図10】

